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Probing the Guiding Role of Taxation in Energy-Saving and Emission-Reducing Technology

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Abstract

With the rapid development of economy in China, the issue is increasingly serious involving the degradation of environment, the shortage of resource and the absence of environmental protection. To keep sustainable development of economy, this paper illustrates stimulating function of tax policy involving in environmental protection, energy-saving and emission-reducing from aspect of encouraging technology innovation. Furthermore, it puts forward policy orientation including further improving tax to support energy-saving and emission-reducing and independent innovation with the analysis of existing tax policy on environmental protection, energy-saving and emission-reducing.

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Keywords: energy-saving and emission-reducing; technology innovation; environmental protection; tax policy

1. Stimulation on Energy-Saving and Emission-Reducing and Independent Innovation of Taxation Policy

In the environment of economic globalization, independent innovation ability is one of the main signs of measuring a country's comprehensive competitive power. Theory and empirical studies have proved, using economic means to solve environment problems most conforms to the cost-benefit principle, and the environment tax can not only achieve established pollution control goals with the minimum cost, but also provide the continuous motivation to reduce pollution from the production process. The government as the national macroeconomic regulation department, not only promotes technology research, energy-saving and emission-reducing development, but realizes the win-win situation of economic and emission-reducing target with formulating energy-saving and emission-reducing development strategic target,

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which is considered from all the social and economic development of the general situation. The government use tax preference policy to implement encouragement for technology innovation of energy-saving and emission-reducing project, and the incentive effect reflects in:

1.1. Incenting Function of Tax Policy on Energy-Saving and Emission-Reducing Technology R&D

From aspect of energy-saving R&D operation mechanism, enterprise technology innovation will go through a systematic sustainable development process including invention, development, design, trial-produce, producibility and commercialization. Tax policy has impact on each link of technology innovation. For instance, tax preference is available to inventors' royalty income and the income from property transfer; Tax deduction is available to risk compensation such as development and design; Product tax is exempted from the intermediate trial stage before product has been put into production formally; When enterprise put new products into production phase by means of advanced technology, accelerated depreciation is allowed by government. The series of oriented policy not only encourage enterprise to engage in energy-saving and emission-reducing technology innovation in the interest mechanism, but create a very comfortable development environment for enterprise's technology R&D operation mechanism.

1.2. Reducing the Risk of Energy-Saving and Emission- Reducing Technology Innovation

It is large investment, long cycle and high risk for enterprise to be engaged in energy-saving and emission-reducing technology innovation. Although the State can not completely take the risk of enterprise, it can help enterprise reduce and defuse risk by means of using the fiscal policy rationally. For instance, the cost, the risk of costs and expenditure in energy-saving and emission-reducing technology innovation can be reduced by tax measures such as tax reduction, expense deduction and capital allowance; The turnover of the funds on energy-saving and emission-reducing technology input can be accelerated by tax deferral measure such as accelerated depreciation, and the risk of funds is lower; The capacity for enterprise to guard against risk of energy-saving and emission-reducing technology innovation can be strengthened by drawing risk reserves.

1.3. Affecting the Costs and Benefits of Energy-Saving and Emission-Reducing Technology Innovation

The role of tax affecting energy-saving and emission-reducing technology innovation mainly plays through preference policy which is beneficial for energy-saving and emission-reducing technology innovation. This is essentially that government has transferred part of the income to enterprise. If the transferred income happens in the process of energy-saving and emission-reducing technology innovation, it will embody the reduction of costs or expenses on energy-saving and emission-reducing technology activity. If the transferred income is in the result of energy-saving and emission-reducing technological activity, it will increase the benefits of energy-saving and emission-reducing technology activity. The function of tax affecting costs and benefits of energy-saving and emission-reducing technology innovation is sensitive, important and effective. Moreover, the function is the entry point and a point of application where tax affects and promotes energy-saving and emission-reducing technology innovation.

2. Tax Policy Analysis about Promoting Energy-Saving and Emission-Reducing Technology Innovation

At present, tax preference policy to encourage energy-saving and emission-reducing technology innovation have begun to take shape in China. It chiefly manifests in electric power produced by using municipal living rubbish, the shale oil produced and processed by using discarded kerogen shale in coal mining process, and the goods produced by comprehensive utilization of resource shall enjoy levy-refund policy of value-added tax; The building material products which are comprehensive utilization of resource shall be exempted from value-added tax; Comprehensive utilization power and wind power which use coal gangue, coal slime and associated coal oil shale shall enjoy half tax collection. Consumption tax will be reduced by 30% mainly to product and market cars, cross-country cars and passenger cars which are up to the Europe Ⅱ emission standard. Sales tax shall be exempted mainly to the income made from technical development and transfer.

Corporate income tax: The part of less than 5 million Yuan shall be exempted which is the income of transferring technology; The part over 5 million Yuan will be levied by half; The corporate income tax in respect of the income generated by the enterprise from operating in the environment protection, energy and water saving projects shall be exempted for the first to third years and allowed 50% reduction in the fourth to sixth years beginning from the tax year the project derived its first production and operation income; Where enterprise use the resource stipulated in the "Catalogue for Comprehensive Utilization of Resources Qualified for Corporate Income Tax Preference Treatments" as its major raw materials to produce products that are not restricted or prohibited by the state and satisfy the relevant state and industrial criteria, only 90% of the income derived shall be used to calculate its total income; High and new technology enterprises are subject to the applicable enterprise income tax rate with a reduction of 15%. For R&D expense not forming an intangible asset, the enterprise is allowed to claim, on top of the actual deduction, an additional deduction of 50% of R&D expense; where an intangible asset is formed, the cost of the intangible asset is allowed to be amortized based on 150%. Where enterprises acquire and actually use specific equipment for the purpose of environment protection, 10% of its investment in the specific equipment may be offset against its income tax payable for the current year. Any excess amount may be carried forward and deductible in the following 5 tax years. Personal income tax is duty free mainly for the awarded bonuses of technology and environment protection by the units at or above the provincial level; Personal rewards of technology achievements in the form of shares are not on pay duty temporarily.

Thus, tax preference policy which encourages energy-saving and emission-reducing in China has already involved a number of taxes, involving both direct and indirect benefits in preference form, and including energy-saving and emission-reducing projects' introduction, R&D, application, transformation, transference and income from it in preference scopes. Policy orientation of encouraging environmental protection and restriction on pollution has been formed, and tax preference policy has provided incentive and funds for protecting environment and reducing pollution. But it is still not perfect from the whole tax system. The main problems are as follows:

Firstly, in China the scope of tax preference policy in energy-saving and emission-reducing technology innovation is narrow, and the standardization is poor. Now in China tax preference policy of promoting independent innovation is mainly focused on enterprise income tax and only high-tech enterprise can be properly taxed by 15%. Value-added tax's levy-refund and half collection preference policy mainly be focused on production power, cement, new wall materials, coal gangue, lime, slag, oil shale, etc, and other environment protection products in energy-saving and emission-reducing haven't be taken into preference range. In addition, except enterprise income tax, the tax preference is scattered, and other categories of tax are stipulated in administrative regulations. It is not standard and lack of stability, which impair the tax preference function largely.

Secondly, the preference tax policy is focused on innovation results but poorly in preference of R&D, popularization and transformation process. Although current scope of tax preference on the promotion of

independent innovation includes technology introduction, R&D, application etc, tax preference mainly concentrates upon the scientific research production or scientific research achievement phases, and there is less preference in process of R&D, popularization and transformation. Especially it is lack of policy that can reduce the lost of research failure and risk investment failure. The policies highly value innovation achievements but ignore the innovation process. It shows inadequate support to independent innovation as going against encouraging more enterprise to join into technology innovation activity.

2.1. Further implement indirect preference policy.

Direct preference policy of tax rate preference and tax periodical relief focused on afterward, which made little sense for enterprise in stage of technology development and technical development failure. However, indirect preference emphasized on beforehand. As long as implementing scientific and technology development and research activity, enterprise can be the preference object, which help to arouse the enthusiasm of enterprise for independent innovation and meet capital source of technical development subject beforehand. And it fully embodies the government policy intention for supporting science and technology innovation. Meanwhile, indirect preference for enterprise not only delay the tax time as equivalent to getting a non-reimbursable loans from the government, but also have good policy guidance, which is beneficial to form good mechanism of "policy guiding market as market leading enterprise" and also beneficial to impartial competition.

2.2. Increasing tax preference for R&D process.

Enterprise innovation is a systemic process of sustainable development including from development, trial-produce to industrialization, productization and commercialization. Tax preference policy can not only confine to development outcome, but pay attention to the preference of R&D devotion and transformation process, especially making the enterprise R&D activity as the key point of tax preference. Therefore, our country should give systematic and integrated tax policy support to energy-saving and emission-reducing innovation process, and cover the independent innovation tax policy to the all links of experiment, trial-produce and industrialization in energy-saving and emission-reducing technology enterprise, and incline from result link to intermediate link. There will be mainly provided tax preference to the high-tech products of manufacture and distribution segments gradually into compensation for the technology development and tax preference for pilot phase, so as to enhance tax policy integration effect and promote energy-saving and emission-reducing technology innovation mechanism developed and improved.

3. The Improvement of Enterprise Technical Innovation Tax Policy after the Enforce of The New *Enterprise Income Tax Law*

According to the national economy and social development needs, the new《Enterprise Income Tax Law》 used the successful experience of other countries to adjust the old tax preference policy properly. In the policy goal respect, it made promoting technology innovation and technology progress as the first principle of preference policy adjustment, which plays a guiding role in tax preference. In preference system, it established a tax preference system of “paying more attention to industry preference than region preference”. By providing tax preference, it guides to put resource into the industries and projects that state encourages and supports, including high-tech enterprise, environmental protection projects, energy and water saving projects, technology progress, technology transfer, comprehensive using of resources, etc. On this basis regional development be overall planned, thus to promote the optimization

and upgrading of industrial structure and balanced development of regional economy. In the preference way, it changes from living on direct preference to the integration of direct preference and indirect preference and uses a lot of tax preference rate, additional deduction, proportional deduction, accelerated depreciation, minus total income, tax credits and other indirect tax preference. It offers supervision in strict overall control and efficiency control to improve the efficiency of tax preference.

Following the adjustment to《Enterprise Income Tax Law》, it made a pushing effect on the mechanism of scientific and technological progress and enterprise independent innovation in China. However, the new 《Enterprise Income Tax Law》 is still not the ideal model learned from the experience of advanced countries. There is still much room for improvement on the part of promoting independent innovation.

Firstly, adjustment to tax preference policy should be combined with the national science and technology development planning. It should play the maximum efficiency of tax policy resource effectively according to the characteristic of independent innovation industrial development, so as to achieve the optimal allocation of tax policy resource. The support points of tax preference policy should be adjusted in time according to different stages of enterprise independent innovation development. In the selection of tax preference link, downstream production and marketing link should be transferred to upstream with stimulating R&D link of new technology and product. And tax incentive of R&D at the core of the all tax preference mechanism should be established gradually. R&D, venture investment and incubator should be heart of tax preference.

Secondly, while playing the status of the income tax benefits as the mainstay, we should also give consideration to other tax incentives in a complementary role. Corporate income tax is based on the company's net investment income, the level of tax rate, scope of deduction and covered deficit directly affecting investment direction and management behavior, and its function of regulating resource allocation is powerful. From practice of countries, supporting independent innovation of enterprise is all dependent on corporate income tax. Technology tax benefits oriented policy of giving priority to enterprise income tax is reasonable. For fruitful independent innovation enterprise, tax incentive should give priority to tax base reduction, giving consideration to tax amount reduction, and try to avoid tax rate reduction. Meanwhile, the supporting role of other taxes should be taken into account. After the implementation of value-added tax transformation, gradually expand granted tax deduction of machinery and equipment which is bought for technology innovation, so as to solve the problem of tax repeating and lack of creativity while enterprise involves in independent innovation investment. For individual income tax, it should increase the innovative talents of preferential taxation policies support.

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